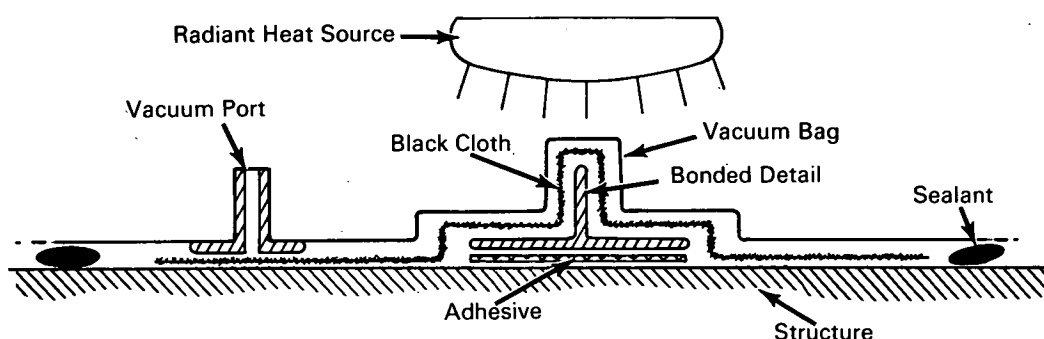


# NASA TECH BRIEF



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## Radiant Heat Source, Vacuum Bag, Provide Portable Bonding Oven



### The problem:

It is frequently necessary to attach doublers, brackets, etc., to the surfaces of large structures. In those cases where conventional fasteners cannot be used, bonding becomes a problem since the size of the structure prevents the use of normal bonding oven techniques.

### The solution:

A technique that uses a radiant heat source in combination with a heat resistant transport vacuum bag and a black heat absorbing cloth to form a portable bonding oven to any desired size or configuration.

### How it's done:

The item to be bonded to the structure is assembled with the bonding agent, black cloth, and vacuum bag to the structure surface. The transparent vacuum bag is sealed to the structure surface with an appropriate sealant and is evacuated. The assembly is then raised to the required bonding temperature by the radiant heat source. The vacuum bag provides

an even pressure to all elements of the assembly plus a short, dense path for heat conduction from the black cloth to the bond line.

### Note:

Inquiries concerning this invention may be directed to:

Technology Utilization Officer  
Manned Spacecraft Center  
Houston, Texas 77058  
Reference: B67-10570

### Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

Source: A. H. Nicholls  
of North American Aviation, Inc.  
under contract to  
Manned Spacecraft Center  
(MSC-11342)

Category 03